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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/633,326	08/07/2000	Eric W. Nace	MS154753.1	3403

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EXAMINER
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GEREZGIHER, YEMANE M

ART UNIT	PAPER NUMBER
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2142

DATE MAILED: 09/08/2003

3

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/633,326

Applicant(s)

NACE ET AL.

Examiner

Yemane M Gerezgiher

Art Unit

2142

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 August 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 August 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. Claims 1 - 21 have been examined.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1, 4 – 12, 17 and 18 are rejected under 35 U.S.C. 102(a) as being anticipated by Banga et al ("Measuring the capacity of a web server") hereinafter referred to as Banga.

As per claims 1, 17 and 18, Banga disclosed techniques of measuring capacity of a web server by generating plurality of HTTP client requests ("generating bursty traffic with peak loads that exceed the capacity of the server") to the server providing a scalable means of generating HTTP requests where the generated request is independent of the rate at which the server handles requests. Banga disclosed increasing the rate of HTTP request until the HTTP server reached at its maximum capacity where the server is stooping to call the accept function in order to keep up with the high HTTP request rate, because the actual requested rate is exceeding the predetermined threshold and adjusting the desired request rate by using a constant think time chosen to achieve a consistent request rate where adding client requests to the queue of the server's

listen socket increases and the request rate remains nearly constant at the capacity of the server (Figures. 1 – 3, 7 and 8 sections 1 – 5.4)

As per claims 4 - 6, Banga disclosed a capacity planning (performance measurement) by monitoring the performance of the server based on the generated HTTP requests and adjusting the desired request according to the predetermined threshold (sections 4 – 5.4)

As per claim 7 – 12, Banga disclosed that measuring the capacity of a server comprising a database storing HTTP requests, a queuing mechanism and a queue storing the requests according to certain time sequence for execution (sections 2 – 4.4)

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 13 – 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Banga et al (article, " Measuring the capacity of a web server") as applied to claims above, and further in view of Yu (U.S. Patent Number 6,078,943).

As per claims 13 – 16, Banga disclosed stress testing of a web server by generating multiple HTTP requests and monitoring and comparing the rate of the

generated requested against the predetermined threshold rate and adjusting the request rate according to the predetermined rate and generating consistent request to the server attaining the capacity of the web server.

However, Banga did not teach a scheduler or a feedback loop controlling the desired rate of requests.

Lu disclosed a scheduler ("arbitrator") receiving an address-mapping request and a feedback loop provided to the scheduler (col.2, lines 55-61 and col.8, lines 41-44). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to take the teachings of Yu related to scheduler and feedback loop provided to the scheduler and have modified Banga related to the measuring capacity of a web server, because the scheduler could benefit to route requests to a chosen server where the feedback loop provided to the scheduler could be used to generate an alarm notification of server overloads, so that fewer client requests are mapped to the overloaded server.

5. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Banga et al (article, " Measuring the capacity of a web server") in view of Dantressangle (U.S. Patent Number 6,446,120)

As per clams 2 and 3, Banga disclosed stress testing of a web server by generating multiple HTTP requests and monitoring and comparing the rate of the generated requested against the predetermined threshold rate and adjusting the

request rate according to the predetermined rate and generating consistent request to the server attaining the capacity of the web server.

However, Banga did not teach a control input for adjusting or providing the desired rate of requests.

Dantressangle disclosed a virtual browser (HTML input form) for launching the configurable stresser where the user at the client server fills the information needed to perform testing such as the desired rate of requests (Abstract, Figs. 8 – 10 and col.10, lines 36-63). One of ordinary skill in the art would have been motivated find teachings that may have allowed for a user at a client station to enter specified data in order to perform testing the performance of a server.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to take the teachings of Dantressangle related to stressing a web server with the browser “control input” and have modified Banga related to measuring capacity of a web server, because such modification would benefit transmitting commands from the client computer to the server.

6. Claims 19 -21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Banga et al (article, “ Measuring the capacity of a web server”) in view of what would have been obvious to one having ordinary skill in the art at the time the invention was made.

Regarding to claims 19 –21, Banga disclosed stress testing of a web server by generating multiple HTTP requests and monitoring and comparing the rate of the generated requested against the predetermined threshold rate and adjusting the request rate according to the predetermined rate and generating consistent request to the server attaining the capacity of the web server.

However, Banga did not show if actual requests per second are below the target per second by performing a subtraction, decreasing actual request if above the target or maintaining the request if the actual request generated is equal to the target request.

However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to determine the target request rate by performing a subtraction to decrease actual requests generated above the target or maintain the actual rate if it is the same as the target rate and have modified Banga related to measuring capacity of a server, because such a modification helps determine the capacity of a server more efficiently.

### **Conclusion**

7. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

- a. Li et al. (U.S. Patent Number 5,583,792 ) disclosed a method and apparatus for integration of traffic measurement and queueing performance evaluation in a network system.
- b. Chung et al. (U.S. Patent Number 6,012,090 ) disclosed a client side parallel requests for network services using group name association.
- c. Abbott et al. (U.S. Patent Number 6,314,463) disclosed a method and system for measuring queue length and delay.
- d. Hu, Wei-Ming (U.S. Patent Number 6,173,322) disclosed a network request distribution based on static and dynamic performance data.
- e. Blewett, Charles Douglas (U.S. Patent Number 6,526,448) disclosed a psuedo proxy server providing instant overflow capacity to computer networks where the host network determines whether an arrival rate of data requests exceeds a predetermined threshold.
- f. Law et al. (U.S. Patent Number 6,330,602) disclosed a client/server architecture of a scaleable web server and method of efficiently managing multiple servers.

#### **NON PATENT DOCUMENTS**

- g. P. Goyal, H. Vin, and H. Cheng. "Start-time fair queuing: A scheduling algorithm for integrated services packet switching networks", In Proc. of ACM SIGCOMM, pages 157-168, Aug. 1996.



- h. G. Banga and P. Druschel. "Measuring the capacity of a web server under realistic loads", World Wide Web, 1999
- i. D. Mosberger and T. Jin. "Httpperf -- A Tool for Measuring Web Server Performance", 1998
- j. P. Goyal, H.M. Vin, H. Cheng, "Start-time fair queuing: A scheduling algorithm for integrated services packet switching networks", IEEE/ACM Transactions on networking, vol. 5, no.5, pp. 690-704, October 1997
- k. Daniel A. Menasce et al, "Capacity Planning for Web Performance: metrics, models, and methods", Prentice Hall, 1998. Chapter 12, pg- 264 - 289.

7. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Yemane Gerezgiher whose telephone number is 703-305-4874. The examiner can normally be reached on Monday- Friday from 8:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful. The examiner's supervisor, Mark Powell, can be reached at 703-305-9703.

Yemane Gerezgiher  
Patent Examiner  
AU 2142

September 2, 2003

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